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YELLOWSTONE RIVER COMPACT COMMISSION

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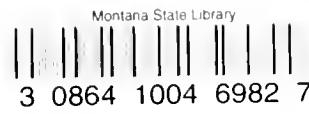
MONTANA



TWENTIETH ANNUAL REPORT

1971

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TWENTIETH ANNUAL REPORT
YELLOWSTONE RIVER
COMPACT COMMISSION
1971

YELLOWSTONE RIVER COMPACT COMMISSION

421 Federal Building
Helena, Montana

Honorable Stanley K. Hathaway
Governor of the State of Wyoming
Cheyenne, Wyoming

Honorable Forrest H. Anderson
Governor of the State of Montana
Helena, Montana

Honorable William L. Guy
Governor of the State of North Dakota
Bismarck, North Dakota

Sirs:

Pursuant to Article III of the Yellowstone River Compact, the Commission submits the following twentieth annual report of activities for the period ending September 30, 1971.

Because of accelerated interest in Yellowstone River water for development of the coal resources of the signatory States, the Commission held two meetings during 1971. At the special meeting at Sheridan, Wyoming on May 6, 1971, Mr. Douglas G. Smith, Director, Montana Water Resources Board, Mr. Floyd A. Bishop, Wyoming State Engineer, the designated representatives of their respective States, and Mr. Robert C. Williams, the designated Federal representative and chairman were all present. Others present were Messrs. Doyl M. Fritz, Wyoming Water Planning Program, Cheyenne, Wyoming; Clarence A. Brimmer, Wyoming Attorney General, Cheyenne, Wyoming; Alvin E. Bielefeld, Office of the Solicitor, U.S. Department of the Interior, Billings, Montana; Phil Q. Gibbs, U.S. Bureau of Reclamation, Billings, Montana; Robert L. Cushman, U.S. Geological Survey, Cheyenne, Wyoming; George M. Pike, U.S. Geological Survey, Helena, Montana; William Long and Paul Kawulok, Wyoming State Board of Control, Sheridan, Wyoming; Myron Goodson, State of Wyoming Department of Economic Planning and Development, Cheyenne, Wyoming; Ronald J. Guse and Jerome T. Leondorf, Montana Water Resources Board, Helena, Montana; and Tom Barker, Wyoming State Engineer's Office, Cheyenne, Wyoming.

At the annual meeting in Sheridan, Wyoming on November 11, 1971, Messrs. Bishop and Williams, Commission members, were present. The Montana member was not present. Others present at the annual meeting were Messrs. George M. Pike and Mrs. Betty L. Dean, U.S. Geological Survey, Helena, Montana; James T. Harrison, Jr.,

Montana Water Resources Board Counsel, Helena, Montana; Mike McCall and Tom Barker, Wyoming State Engineer's Office, Cheyenne, Wyoming; Robert L. Cushman, U.S. Geological Survey, Cheyenne, Wyoming; Paul Kawulok, Donald D. Englert, and William Long, Wyoming State Board of Control, Sheridan, Wyoming; Alvin E. Bielefeld, Office of the Solicitor, U.S. Department of the Interior, Billings, Montana; Phil Q. Gibbs, U.S. Bureau of Reclamation, Billings, Montana; Alan K. Grindberg, North Dakota State Water Commission, Bismarck, North Dakota; Myron Goodson, State of Wyoming Department of Economic Planning and Development, Cheyenne, Wyoming; and Robert B. Hoffman, Montana Water Resources Board, Helena, Montana.

There were no incidents during the year that required administration of water in accordance with the provisions of the Compact. At the present level of water-resources development, the Commission feels that a program of intensive water-use regulations is not necessary. However, Commission functions are becoming more important and more time consuming as each signatory State visualizes the time when all of its share of Yellowstone River water will be required for development within its borders. During the reporting period, the Commission kept abreast of developments that would affect the administration of the Compact, and began preparing for implementation of its provisions.

Interest in Yellowstone River water for use in the development of coal resources in the signatory States continues to increase. This is evidenced by the attendance of executives from 85 energy companies at a recent meeting on aqueduct studies conducted by the U.S. Bureau of Reclamation in Denver, Colorado, and by requests to the Bureau for options on 1.7 million acre-feet of Yellowstone River water.

The Commission recognized the necessity for the signatory States to work together to obtain the most benefit from the use of Yellowstone River water. During 1971, a large amount of time and effort was devoted to the exchange of views on provisions of the Compact. In addition to the two Commission meetings, State representatives met at two other meetings to discuss the action necessary to facilitate use of water for development of coal resources. A large part of the discussion at all of the meetings concerned the need to obtain unanimous approval by the signatory States for diversion of water from the Yellowstone River basin. This is of importance because much of the interest shown by the energy industry is related to development of the coal resources in the Gillette, Wyoming area, some of which is outside of the Yellowstone River basin. Correspondence has been initiated between the Attorneys General of the three States concerning this matter. It appears that State legislative action may be required.

During the past year the Commission has directed its attention to State water laws that conflict with provisions of the Compact. It appears there are some, particularly Section 89-846 of the Montana water law, that need legislative action to make them compatible with the Compact. Because it is absolutely necessary that all parties have the same interpretation of terms of the Compact, the Commission has also focused some attention on the ambiguity of some parts of the Compact.

A problem that continues to be of long-range concern is the uncertainty related to the quantity of water to reserve for claims on those streams flowing through Indian reservations. Some studies are underway to determine the potential requirements for water on the reservations; however, the Commission does not believe that there will be an early settlement of the claims.

The Commission continues to recognize the need for expansion of water-measurement activities in the basin; however, the flourish of interest in the use of Yellowstone River water has put a new perspective on the program. The future requirements are being re-evaluated to take into account the possibility that development of the full potential of the river may take place much sooner than was previously expected. At the request of the Commission, the U.S. Geological Survey evaluated data requirements in terms of Compact provisions and Commission needs. The result was an informal report that outlined data deficiencies and made some recommendations for improvement. On the basis of the analysis, a preliminary computation procedure was devised by the chairman and presented to the Commission for consideration.

For the fiscal year beginning July 1, 1971, the budget for stream-gaging activities and annual-report publication is \$18,270. The estimate for this work during the fiscal year beginning July 1, 1972, is \$12,370. The decrease reflects the fact that no new work is planned for next fiscal year. The funds required for future Commission activities will depend largely on the outcome of water-development plans and on the degree of water administration required.

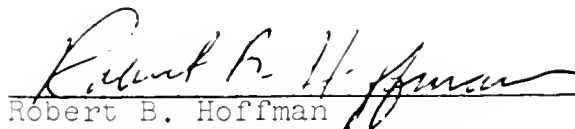
Two changes were made in the Commission during 1971. On December 7, 1971, Mr. Robert B. Hoffman, Yellowstone River Compact Coordinator for the Montana Department of Natural Resources and Conservation, was selected as the Montana representative on the Commission to succeed Douglas G. Smith. A small increase in Federal Yellowstone River Compact funds for fiscal year 1972 permitted the services of a stenographer to record minutes of

Commission meetings. Mrs. Betty Dean, U.S. Geological Survey, Helena, Montana, assumed these duties at the November 1971 annual meeting.

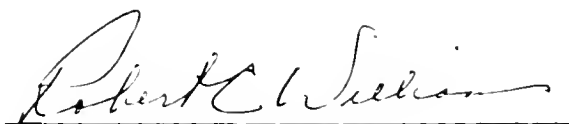
Respectfully submitted,



Floyd A. Bishop
Commissioner for Wyoming



Robert B. Hoffman
Commissioner for Montana



Robert C. Williams
Federal Representative

GENERAL REPORT

Cost:

The work funded by the Commission, which to date has been primarily concerned with the collection of required hydrologic data, has been financed through cooperative arrangements whereby Montana and Wyoming each bear one-fourth of the cost and the remaining one-half is borne by the United States. The salaries and necessary expenses of the State and Federal representatives, and hydrologic data made available by other agencies, are not evaluated or considered as expenses of the Commission.

The expense of the Commission during the fiscal year ending June 30, 1971, was \$12,930, in accordance with the budget adopted for that year.

The budgets for the fiscal years ending June 30, 1972, and June 30, 1973, were tentatively adopted during the preceding year subject to the availability of appropriations. The 1972 fiscal year budget was confirmed at the 1971 annual meeting.

The budgets for the two fiscal years are summarized as follows:

July 1, 1971, to June 30, 1972:

Continuation of existing program	\$11,770
Installation of new A-frames at the gaging station on the Tongue River near Miles City, Montana	900
Purchase and installation of two experimental flow totalizers and related equipment for an undetermined amount, plus the unexpended balance	<u>5,600</u>
Total	\$18,270

July 1, 1972, to June 30, 1973:

Continuation of existing program	\$12,370
Total	<u>\$12,370</u>

Gaging Stations:

Gaging stations at the measuring sites specified in the Compact were continued in operation and satisfactory discharge records collected at each. In addition, a station on Prairie Dog Creek near the State line was operated for Compact administration purposes.

During the year ending September 30, 1970, annual streamflow at the designated points of measurement in Montana was above normal as a result of an above average snowpack and above normal spring precipitation. Flow at the Compact points of measurement ranged from 131 to 201 percent of the 1953-67 averages. In general, precipitation was above normal during the early part of the growing season and below normal during the latter part of the season. Except for a few isolated areas without adequate storage, supplies were generally sufficient to meet needs during the irrigation season because of the large storage carryover from the above normal snowpack and ample spring precipitation.

Details of streamflow for the 1971 water year and bar-graphs showing comparisons with average flows during selected base periods and with the preceding year are given in Appendix B.

Diversions:

Opinions expressed by the two State representatives indicated that allocable diversions in Montana and Wyoming initiated since January 1, 1950, did not warrant detailed consideration and that use in the upstream State did not exceed Compact allowances.

The U.S. Bureau of Reclamation completed preliminary pipeline surveys and a report is to be ready in January 1972. Numerous routes and schemes were investigated, including trans-basin diversion from the Green River. Estimated cost of the water delivered at Gillette varies from \$76 to \$132 per acre-foot. The estimated costs at Colstrip vary from \$35 to \$57 per acre-foot.

Storage:

In reservoirs completed after January 1, 1950

Bighorn Lake, a U.S. Bureau of Reclamation project on the Bighorn River, and the largest storage project in the basin, contained 1,051,000 acre-feet at the beginning of the year and 1,073,000 acre-feet at the close. It fluctuated from a minimum of 698,400 acre-feet on May 28, 1971, to a maximum of 1,073,000 acre-feet on September 30, 1971. Boysen Reservoir, located on the Wind River and operated by the U.S. Bureau of Reclamation, began the year with 601,300 acre-feet in storage and ended with 680,700 acre-feet. Details regarding these reservoirs are given in Appendix C. The Commission is cognizant of other reservoirs in this general group and considers their aggregate effect to be insufficient to warrant the collection of storage data at this time.

